

**Origin of Universal Correlation between Temperature  
and Emission Measure for Solar/Stellar Flares**

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We present a theory to explain the observed universal correlation between flare temperature  $T$  and emission measure  $EM = n^2 V$  for solar and stellar flares (including solar microflares observed by Yohkoh as well as protostellar flares observed by ASCA), where  $n$  is the electron density and  $V$  is the volume. The theory is based on a magnetic reconnection model with heat conduction and chromospheric evaporation, assuming that the gas pressure of a flare loop is comparable to the magnetic pressure. This theory predicts the relation  $EM \propto B^{-5} T^{17/2}$  which explains well the observed correlation between  $EM$  and  $T$  in the range of  $6 \times 10^6$  K  $< T < 10^8$  K and  $10^{44} < EM < 10^{55}$  cm<sup>-3</sup> from solar microflares to protostellar flares, if the magnetic field strength of a flare loop,  $B$ , is nearly constant for solar and stellar flares.